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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/728,121	12/04/2000	Eiichi Masuhara	199553US0	3805

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EXAMINER

JAGOE, DONNA A

ART UNIT	PAPER NUMBER
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1614

DATE MAILED: 04/10/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Applicant(s)

09/728,121

Applicant(s)

MASUHARA ET AL.

Examiner

Donna Jagoe

Art Unit

1614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period of Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,3-12 and 21-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-12 and 21-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

***Claims 1, 3-12 and 21-23 are pending in this application.***

***Response to Arguments***

Applicant's argument, see page 5, lines 4-8, filed January 2, 2003, with respect to objection to the specification's incorporation by reference of the foreign priority document have been fully considered and are persuasive. The objection of the specification has been withdrawn.

Applicant's arguments, see page 4, filed January 2, 2003, with respect to the rejection(s) of claim(s) 1-12 and 21-23 under 35 U.S.C. 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Hayakawa et al (see below).

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4-6, 8-12 and 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Hayakawa et al. U.S. Patent No. 6,165,256 A.

The claims are drawn to compositions comprising a photocatalytic titanium oxide or a photocatalytic titanium oxide precursor and a silicon compound of formula I, a hydrolyzate of said silicon compound I, a silicone resin, silicone resin precursor or silica

in a liquid medium with a ratio of Ti/Si of 20/1 to 1/1. Claim 4 is drawn to the composition of claim 1 wherein the silicone resin precursor is selected from the group consisting of a silane compound, a silazane and a mixture thereof. Claim 5 is drawn to a dental and orologic composition. Claim 1 is directed to the liquid media such as an alcohol. Claim 8 is drawn to the composition of claim 1 further comprising at least one particle selected from the group consisting of silver, copper, zinc, metal salt and mixtures thereof. Claim 10 is drawn to a dental and orologic composition comprising a photocatalytic titanium oxide and a liquid medium. Claim 11 is drawn to a film comprising the composition of claim 1. Claim 12 is drawn to the film of claim 11 on dental materials not in the mouth. Claims 21-23 are drawn to the film of claim 1 applied by baking or drying and in contact with a surface of dental materials not in the mouth.

Hayakawa et al. teach a composition comprising a photocatalytic metallic oxide (see abstract) such as titanium oxide (column 7, lines 27-30) and tetrafunctional hydrolyzable silane derivatives (see column 7, line 56 bridging to column 9, line 7). The ratio of Ti/Si is shown in the examples (column 15, line 12 to column 24, line 35). The example recited in column 15, lines 18-23 recites a ratio of Ti/Si of 8/2 (this would translate to 16/1). The next example in column 15 recites a ratio of Ti/Si of 1/1. These ratios are encompassed by the instantly claimed ratio of 20/1 to 1/1. Regarding the composition of claim 5 for dental use, this is regarded as intended use. Regardless, the composition appears to be useful for dental mouth mirrors (column 5, line 65) and converging lenses for laser dental treatment equipment (column 6, lines 15-16). Claim 8, drawn to an additional particle selected from the group consisting of silver, copper,

zinc, metal salt and mixtures thereof is recited in column 12, lines 46-55. Claim 10, which recites the titanium oxide diluted in liquid media is recited in example A1, column 15. The composition is applied to glass. The thin film of claims 11-12 is recited in column 13, lines 23-35. Claims 21-23 recite the film as baked or dried onto the surface. Column 13, lines 36-45 recites the thin film dried or cured onto the surface.

Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayakawa et al. as applied to claims 1, 4-6, 8-12 and 21-23 above, and further in view of Remington's Pharmaceutical Science (U).

Claim 3 recites the composition of claim 1 wherein the photocatalytic titanium dioxide precursor is titanium alkoxide. It would have been obvious to substitute titanium alkoxide for titanium oxide since Hayakawa et al. teach photocatalytic particles of a metallic oxide and since it is known that titanium alkoxide is a photocatalytic metallic oxide. Such a modification would have been motivated by the reasoned expectation of producing a photocatalytic composition which is effective in comprehensively initiating a radical reaction to cause the oxidation of organic products under the appropriate wavelength as in Hayakawa et al.

Claim 7 is drawn to the composition of claim 1 and further comprising a thickener. It would have been obvious to incorporate a thickener in the composition of the instant application since silica is known to be a thickener as recited in Remington's Pharmaceutical Sciences (page 385, 2<sup>nd</sup> full paragraph).

Thus the claims fail to patentably distinguish over the state of the art as represented by the cited references.

No claims are allowed.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donna Jagoe whose telephone number is (703) 306-5826. The examiner can normally be reached on Monday through Friday from 8:00 A.M. - 4:30 P.M..


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marianne Seidel can be reached on (703) 308-4725. The fax phone

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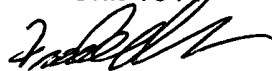
numbers for the organization where this application or proceeding is assigned are (703) 305-3230 for regular communications and (703) 872-9307 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1235.



Donna Jagoe  
Examiner  
Art Unit 1614

Frederick Krass  
Primary Examiner  
Art Unit 1614



April 6, 2003